

1 **WHAT IS CLAIMED IS:**

- 2 1. A process comprising:
3 adding peroxide degradable polymers to a wellbore fluid;
4 adding a peroxide source to a wellbore fluid;
5 pumping said wellbore fluids into the wellbore; and
6 changing the pH of the fluid in the wellbore using a substantial portion of fluids
7 produced from subterranean formations so as to activate the peroxide source.
- 8 2. The process of Claim 1 wherein the peroxide degradable polymer comprises a
9 polysaccharide.
- 10 3. The process of Claim 1 wherein the encapsulated peroxide source comprises an
11 inorganic peroxide.
- 12 4. The process of Claim 3 wherein the inorganic peroxide is selected from a zinc
13 peroxide, alkaline earth metal peroxides, and combinations thereof.
- 14 5. The process of Claim 4 wherein the alkaline earth metal peroxide comprises
15 magnesium peroxide.
- 16 6. The process of Claim 1 wherein the inorganic peroxide source is encapsulated.
- 17 7. The process of Claim 6 wherein the encapsulating material is substantially
18 insoluble in wellbore fluids having a pH value greater than about 7.5.
- 19 8. The process of Claim 7 wherein the encapsulating material comprises a film-
20 forming polymer.
- 21 9. The process of Claim 8 wherein the film-forming polymer comprises an enteric
22 polymer.
- 23 10. The process of Claim 9 wherein the enteric polymer comprises a copolymer of
24 acrylic acid compounds and acrylate compounds.
- 25 11. The process of Claim 9 wherein the enteric polymer comprises a copolymer of a
26 mixture of monomers selected from acrylic acid, acrylamide, methacrylic acid,
27 ethylacrylate, methyl methacrylate, and combinations thereof.
- 28 12. A process for degrading polysaccharide polymers contained in a filter-cake located
29 in functional proximity to the surface of a subterranean rock formation penetrated
30 by a well, the process comprising:

- 1 suspending a metal peroxide in a polysaccharide-containing wellbore fluid,
- 2 wherein the wellbore fluid has a pH value greater than about 7.5,
- 3 pumping the wellbore fluid into the well,
- 4 allowing some filtration of the fluid into a subterranean rock formation to produce
- 5 a filter cake, wherein the filter cake contains the alkaline earth metal or zinc
- 6 peroxide, polysaccharides, and any materials that may have been suspended in the
- 7 wellbore fluid,
- 8 bringing the well into production of a subterranean rock formation fluid, wherein
- 9 the formation fluid exhibits a pH of less than about 7.0,
- 10 allowing the formation fluids to contact the filter cake so as to lower the pH value
- 11 of the filter cake, and
- 12 allowing the metal peroxide in the filter cake to activate at the lower pH and
- 13 degrade the polysaccharide components, thereby causing the filter cake to weaken and/or
- 14 increase in permeability, so as to increase production rates.
- 15 13. The process of Claim 12 wherein the metal peroxide is encapsulated.
- 16 14. The process of Claim 13 wherein the encapsulating material is substantially
- 17 insoluble in wellbore fluids having a pH value of at least about 7.5.
- 18 15. The process of Claim 14 wherein the encapsulating material comprises a film-
- 19 forming polymer.
- 20 16. The process of Claim 15 wherein the film-forming polymer comprises an enteric
- 21 polymer.
- 22 17. The process of Claim 16 wherein the enteric polymer comprises a copolymer of
- 23 acrylic acid compounds and acrylate compounds.
- 24 18. The process of Claim 16 wherein the enteric polymer comprises a copolymer of a
- 25 mixture of monomers selected from acrylic acid, acrylamide, methacrylic acid,
- 26 ethylacrylate, methyl methacrylate, and combinations thereof.
- 27 19. A wellbore fluid comprising a peroxide degradable polymer and an encapsulated
- 28 peroxide source.
- 29 20. The wellbore fluid of Claim 19 wherein the peroxide degradable polymer
- 30 comprises a polysaccharide.

- 1 21. The wellbore fluid of Claim 19 wherein the encapsulating material is substantially
2 insoluble in wellbore fluids having a pH value greater than about 7.5.
- 3 22. The wellbore fluid of Claim 19 wherein the encapsulating material comprises a
4 film-forming polymer.
- 5 23. The wellbore fluid of Claim 22 wherein the film-forming polymer comprises an
6 enteric polymer.
- 7 24. The wellbore fluid of Claim 23 wherein the enteric polymer comprises a
8 copolymer of acrylic acid compounds and acrylate compounds.
- 9 25. The wellbore fluid of Claim 23 wherein the enteric polymer comprises a
10 copolymer of a mixture of monomers selected from acrylic acid, acrylamide, methacrylic
11 acid, ethylacrylate, methyl methacrylate, and combinations thereof.
- 12 26. The wellbore fluid of Claim 19 wherein the peroxide source comprises an
13 inorganic peroxide compound.
- 14 27. The wellbore fluid of Claim 26 wherein the inorganic peroxide is selected from a
15 zinc peroxide, alkaline earth metal peroxides, and combinations thereof.
- 16 28. The wellbore fluid of Claim 27 wherein the alkaline earth metal peroxide
17 comprises magnesium peroxide.
- 18 29. The wellbore fluid of Claim 16 wherein the peroxide source is selected from a
19 zinc peroxide, alkaline earth metal peroxides, and combinations thereof.
- 20 30. The wellbore fluid of Claim 29 wherein the alkaline earth metal peroxide
21 comprises magnesium peroxide.
- 22 31. A method of using a change in the pH value of a down hole environment to
23 control the release of peroxide in said down hole environment using produced fluids to
24 effect said change in pH value.
- 25 32. The method of Claim 31 wherein the peroxide is provided to the down hole
26 environment in a wellbore fluid.
- 27 33. The method of Claim 32 wherein the wellbore fluid further comprises a peroxide
28 degradable polymer.
- 29 34. The method of Claim 31 wherein the wellbore fluid comprises the wellbore fluid
30 of Claim 19.

- 1 35. The method of Claim 31 wherein the wellbore fluid comprises the wellbore fluid
2 of Claim 29.
- 3 36. The method of Claim 31 wherein the change in pH is effected by using the
4 produced fluids to lower the pH of a wellbore fluid.
- 5 37. The method of Claim 31 wherein the source of the peroxide comprises an
6 inorganic peroxide source.
- 7 38. The method of Claim 37 wherein the inorganic peroxide is selected from a zinc
8 peroxide, alkaline earth metal peroxides, and combinations thereof.
- 9 39. The method of Claim 38 wherein the alkaline earth metal peroxide comprises
10 magnesium peroxide.
- 11 40. The method of Claim 31 wherein the peroxide comprises an encapsulated
12 peroxide source.
- 13 41. The method of Claim 40 wherein the encapsulating material is substantially
14 insoluble in wellbore fluids having a pH value greater than about 7.5.
- 15 42. The method of Claim 41 wherein the encapsulating material comprises a polymer.
- 16 43. The method of Claim 42 wherein the polymer comprises a film-forming polymer.
- 17 44. The method of Claim 43 wherein the film-forming polymer comprises an enteric
18 polymer.
- 19 45. The method of Claim 44 wherein the enteric polymer comprises a copolymer of
20 acrylic acid compounds and acrylate compounds.
- 21 46. The method of Claim 44 wherein the enteric polymer comprises a copolymer of a
22 mixture of monomers selected from acrylic acid, acrylamide, methacrylic acid,
23 ethylacrylate, methyl methacrylate, and combinations thereof.
- 24 47. The method of Claim 44 wherein the encapsulated peroxide source comprises an
25 inorganic peroxide source.
- 26 48. The method of Claim 47 wherein the inorganic peroxide source is selected from a
27 zinc peroxide, alkaline earth metal peroxides, and combinations thereof.
- 28 49. The method of Claim 48 wherein the alkaline earth metal peroxide comprises
29 magnesium peroxide.